Name _____ Date _____

Demonstration 1: Pressure Streams

In this demonstration, you will place two holes of equal size in a soda bottle. You will observe what happens when the bottle is filled with water and explain what you observe in terms of pressure.

Materials

- 2-liter soda bottle
- thumbtack
- tub or tray, at least 60-centimeter x 60-centimeter (2-foot x 2-foot)
- ruler
- container for pouring water
- water

Instructions

1. Peel the label off of the soda bottle.
2. Use the thumbtack to place a hole near the bottom of the bottle. The hole must be above the bottom curve of the bottle. Do not wiggle the thumbtack around to make a larger hole.
3. Use the thumbtack to place a second hole near the top of the bottle on the same side as the first hole. The hole should be beneath the top curve of the bottle.
4. Using the space below, make a prediction about what will happen when you fill the bottle with water.
5. Place the bottle in a tub or tray to catch the water.
6. Place a ruler on the bottom of the tub or tray to measure the horizontal distance the water will travel.
7. Fill the bottle with water and observe what happens. Use the ruler to measure the horizontal distance the water travels from each hole.
8. Use the spaces below to describe your observations and explain them in terms of pressure.

Demonstration 1: Pressure Streams, continued

1. Make a prediction about what will happen when you fill the bottle with water.

2. Describe what you observed when you filled the bottle with water. Include measurements.

3. Explain what you observed in terms of pressure. How did pressure affect the water flow? Be specific, and use the pressure equation to describe your observations.